

IN THE CLAIMS:

Please amend Claim 1 as follows:

1. (Amended) A method of producing a reconstructed avian zygote or oocyte comprising the steps of:

- Q5
SUB B1)
- (i) providing a recipient cell selected from the group consisting of avian oocytes arrested at metaphase II and pronuclear zygotes;
 - (ii) visualizing the nuclear material of the recipient cell using light in the near-infrared region;
 - (iii) enucleating the recipient cell; and
 - (iv) introducing a donor nucleus from the same species as the recipient cell into the recipient cell to produce a the reconstructed avian zygote or oocyte.

2. The method of claim 1, in which the nuclear material of the recipient cell is visualized with near-infrared light using two photon laser scanning microscopy.

3. The method of claim 1, wherein the light has a wavelength from about 700 nm to about 1000 nm.

4. The method of claim 1, wherein the recipient cell is enucleated through the use of laser-mediated ablation.

Q6
Please amend claim 5 as follows:

5. (Amended) The method of claim 1, wherein the visualization and enucleation are conducted using two photon laser scanning microscopy.

6. The method of claim 1, wherein the donor nucleus is genetically modified.

Please cancel Claims 7-10.

Please amend Claim 11 as follows:

Q7

11. (Amended) The method of claim 1 wherein the avian is selected from the group consisting of chickens, ducks, turkeys, quails, ostriches and pheasants.

Please cancel Claims 12 and 13.

Please amend Claim 14 as follows:

Q8

SUB. 12

14. (Amended) A method of producing a cloned avian comprising the steps of:

- (i) providing a recipient cell selected from the group consisting of avian oocytes arrested at metaphase II and pronuclear zygotes;
- (ii) visualizing the nuclear material of the recipient cell using light in the near-infrared region;
- (iii) enucleating the recipient cell using light in the near infrared region;
- (iv) introducing a donor nucleus from the same species as the recipient cell into the recipient cell to produce a reconstructed avian zygote or oocyte;
- (v) activating the reconstructed zygote or fertilizing the reconstructed oocyte;
- (vi) transferring the reconstructed zygote or fertilized oocyte into an oviduct of a recipient female of the same species as the zygote or oocyte; and
- (vii) allowing the reconstructed zygote or oocyte to develop to term.

15. The method of claim 14, wherein the light has a wavelength from about 700 nm to about 1000 nm.

16. The method of claim 14, wherein the recipient cell nucleus is visualized using two photon laser scanning microscopy.

17. The method of claim 14, wherein the recipient cell is enucleated using two photon laser scanning microscopy.

18. The method of claim 14, wherein the visualization and enucleation are conducted using two photon laser scanning microscopy.

Please amend Claim 19 as follows:

19. (Amended) A method of producing a transgenic avian comprising the steps of:

- Q 9
SUB 133)
- (i) providing an avian recipient cell selected from the group consisting of avian oocytes arrested at metaphase II and pronuclear zygotes;
 - (ii) visualizing the nuclear material of the recipient cell using light in the near-infrared region;
 - (iii) enucleating the recipient cell;
 - (iv) introducing a transgenic avian donor nucleus from the same species as the recipient cell into the recipient cell to produce a reconstructed avian zygote or oocyte;
 - (v) activating the reconstructed zygote or fertilizing the reconstructed oocyte;
 - (vi) transferring the reconstructed zygote or fertilized oocyte into an oviduct of a recipient female of the same species as the zygote or oocyte; and
 - (vii) allowing the reconstructed zygote or oocyte to develop to term.

20. The method of claim 19, wherein the transgene codes for a protein selected from the group consisting of human growth hormone, interferon, β -casein, α -1 antitrypsin, antithrombin III, collagen, factor VIII, factor IX, factor X, fibrinogen, hyaluronic acid, insulin, lactoferrin, protein C, erythropoietin (EPO), granulocyte colony-stimulating factor (G-CSF), granulocyte macrophage colony-stimulating factor (GM-CSF), tissue-type plasminogen activator (tPA), feed additive enzymes, somatotropin and chymotrypsin.

Please amend Claim 21 as follows:

21.(Amended). A method of producing a protein, comprising:

Q 10 (i) producing a transgenic avian according to the method of claim 19 wherein the transgene encodes an exogenous protein, said protein deposited in the white of the developing eggs of said avian;

(ii) harvesting hard shell eggs; and

(iii) isolating the exogenous protein from said eggs.

22. The method of claim 21 wherein the exogenous protein is selected from the group consisting of human growth hormone, interferon, β -casein, α -1 antitrypsin, antithrombin III, collagen, factor VIII, factor IX, factor X, fibrinogen, hyaluronic acid, insulin, lactoferrin, protein C, erythropoietin (EPO), granulocyte colony-stimulating factor (G-CSF), granulocyte macrophage colony-stimulating factor (GM-CSF), tissue-type plasminogen activator (tPA), feed additive enzymes, somatotropin and chymotrypsin.

Please cancel Claim 23.

24. A method of claim 19 wherein the avian is a knock-out or knock-in avian.

25. An intact hard shell egg containing less than the normal complement of endogenous proteins found in the egg.

26. A reconstituted avian embryo prepared by transferring the nucleus of a donor cell into a suitable recipient cell.

27. An embryo of claim 26 in which the donor cell is quiescent.

Please add new Claims 28-33.

28. (New) A method of producing a cloned avian comprising:

- SUB B5)
- (i) producing a reconstructed zygote by the process of claim 1;
 - (ii) transferring the reconstructed zygote into an oviduct of a recipient female of the same species as the zygote; and
 - (iii) allowing the reconstructed zygote to develop to term.

29. (New) The method of claim 28, wherein the cloned avian is selected from the group consisting of chicken, duck, turkey, quail, ostrich and pheasant.

Q 11
SUB B6)

30. (New) A method of producing a cloned avian comprising:

- (i) producing a reconstructed oocyte by the process of claim 1;
- (ii) fertilizing the reconstructed oocyte to produce a reconstructed zygote;
- (ii) transferring the reconstructed zygote into an oviduct of a recipient female of the same species as the zygote; and
- (iii) allowing the reconstructed zygote to develop to term.

31. (New) The method of claim 30, wherein the cloned avian is selected from the group consisting of chicken, duck, turkey, quail, ostrich and pheasant.

32. (New) A method of preparing a recipient cell comprising the steps of:

- SUB B7)
- (i) providing a cell having a nucleus therein;
 - (ii) visualizing the nucleus using light in the near-infrared region; and
 - (iii) ablating the nucleus to provide an enucleated recipient cell.

33. (New) The method of claim 32 wherein the nucleus is visualized and ablated via two photon laser scanning microscopy.